

## CLAIMS

1. A data transmission system comprising a transmitting side apparatus that transmits data and a receiving side apparatus that receives data, wherein:

said receiving side apparatus measures data reception quality and if an error is detected in data transmits to said transmitting side apparatus a signal indicating a retransmission request and said reception quality; and

said transmitting side apparatus detects a capacity necessary for demodulation by said receiving side apparatus from said reception quality at the time of retransmission request reception, and determines a capacity for data retransmission based on this detected capacity and traffic conditions.

2. The data transmission system according to claim 1, wherein said transmitting side apparatus finds a transmissible maximum transmission capacity in traffic at the time of data retransmission, and if the capacity necessary for demodulation is greater than this maximum transmission capacity, retransmits data at said maximum transmission capacity.

3. The data transmission system according to claim 1, wherein said transmitting side apparatus assigns radio resources so that data is retransmitted at the transmissible maximum transmission capacity in traffic

at the time of data retransmission.

4. The data transmission system according to claim 1, wherein said transmitting side apparatus preassigns radio resources to be used for transmission before data

5 transmission, and uses these assigned radio resources until retransmission of one transmit unit of data ends.

5. The data transmission system according to claim 1, wherein said transmitting side apparatus preassigns radio resources to be used for transmission before data

10 transmission, and uses these assigned radio resources until transmission of an arbitrary transmit data unit or all transmit data ends.

6. The data transmission system according to claim 1, wherein said receiving side apparatus performs

15 measurement of reception quality only the first time an error is detected, and said transmitting side apparatus retransmits data at a capacity based on said reception quality until the end of retransmissions.

7. The data transmission system according to claim 1,

20 wherein said receiving side apparatus performs measurement of reception quality at a rate of once per predetermined number of times, and said transmitting side apparatus retransmits data at a capacity based on the latest said reception quality.

25 8. The data transmission system according to claim 1, wherein said transmitting side apparatus assigns radio resources according to traffic at the time of data

retransmission, and transmits within said radio resources data with a capacity that compensates for an excess or deficiency of reception quality at the time of the previous data transmission.

5 9. The data transmission system according to claim 1, wherein said receiving side apparatus prepares a plurality of retransmission request signals differentiated according to reception quality, and transmits a retransmission request signal corresponding  
10 to reception quality measured at the time of error detection.

10 10. The data transmission system according to claim 9, wherein said receiving side apparatus prepares a power of 2 - 1 retransmission request signals differentiated  
15 according to reception quality.

11. A data transmission system comprising:

a transmitting side apparatus that transmits, multiplexed with data, a first signal indicating information on radio resources assigned based on traffic  
20 conditions; and

a receiving side apparatus that measures the reception quality of said data and, if an error is detected in said data, determines a capacity when said data is retransmitted within the radio resources indicated by  
25 said first signal, and transmits a second signal requesting retransmission and a third signal indicating said determined capacity;

wherein said transmitting side apparatus retransmits data at a capacity indicated by said third signal when said second signal is received.

12. A data transmission system comprising a base station apparatus and a communication terminal apparatus, wherein:

said communication terminal apparatus measures data reception quality and if an error is detected in data transmits to said base station apparatus a signal indicating a retransmission request and said reception quality; and

said base station apparatus detects a capacity necessary for demodulation by said communication terminal apparatus from said reception quality at the time of retransmission request reception, and determines a capacity for data retransmission based on this detected capacity and traffic conditions.

13. A data transmission method wherein:

a receiving side apparatus measures reception quality of receive data and if an error is detected in said receive data transmits a signal requesting retransmission and a signal indicating said reception quality; and

a transmitting side apparatus detects a capacity necessary for demodulation by said receiving side apparatus from said reception quality at the time of a retransmission request, and retransmits data at that

capacity.

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